Water Body Assessment Guidance, 3rd Edition

Basin Advisory Group Consultation: Response to Comments Received

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- 3. Southwest BAG

Com	Section	Com	Comment	Response
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1.	Section 3. Beneficial Use Identification for Assessment	1.	When the draft guidance mentions the CWA goals of either "fishable" or "swimmable", it also needs to be mentioned at these draft guidance locations that these CWA goals are "wherever attainable", and not lead the reader to believe these are legal absolutes.	Section 3 Introduces the phrase "fishable and swimmable" thusly: The act requires that, wherever attainable, all waters of the nation be protected for "propagation of fish, shellfish and wildlife" and "recreation in and on the water." This idea is often shortened to the statement that waters must be "fishable and swimmable." These are the minimum set of uses, unless unattainable, along with considering the value of water for public water supply, agricultural and industrial uses, and navigation. This explicitly addresses the attainability of fishable and swimmable uses in its description. Further, we have edited Section 3.3 to read: Because the Clean Water Act requires waters to be "fishable and swimmable" where attainable, Idaho water quality standards apply cold water aquatic life and recreational use protections as presumed use protections to any water (except man-made or private waters) that is not designated for aquatic life or recreation or is not found to have existing recreation uses. Thus, barring a use attainability analysis that rules out any form of recreational use, all such waters are protected for recreation
2.	Section 3.2.4 Domestic Water Supply Use	1.	When it comes to "domestic" use, DEQ should be clear that it is NEVER safe ANYWHERE to drink untreated surface water. In the very limited instances where untreated surface water is used for truly domestic purposes, DEQ should focus assistance efforts on point-of-use treatment and not subject the regulated community to a use of raw surface water which is NEVER safe	Added clarifying language to section 3.2.4: Domestic water supply use is defined as requiring water quality appropriate for drinking water supplies. (IDAPA 58.01.02.100.03.a). This is not meant to imply that treatment is not necessary or that waters designated for domestic water supply use are safe for consumption without treatment.

3.	Section 3.2.3 Recreation Uses	1.	A starting point for the evaluation of primary contact recreation use (PCR) should not be May. Spring runoff would be occurring in many instances, thus safety considerations should warrant that PCR is not prudent during spring runoff. Further, water temperatures should be a consideration as should access before a PCR use is given – many areas are not accessible as snowpacks melt. A rational starting point would be late-June and even into July for many areas of Idaho.	While it is true that in many parts of the state water temperatures and runoff preclude swimming until well past May, in other parts of the State swimming and other forms of PCR can and do appear in May. Added the "safe" to the description of when to consider PCR existing: PCR is an existing use if conditions conducive to safe, full immersion in the water body occur between May and September.
4.	snowpacks melt. A rational starting point would be late– June and even into July for many areas of Idaho. 2. Sixty percent (60%) of members consider it more serious to generate a Type I error. Incorrectly listing an unimpaired stream as impaired will cause the expenditure of limited resources for an unachievable goal that cannot be resolved without dire scrutiny. These members prefer Alternative #1 for Mountain and Foothill Sites, Alternative #4 for Plains, Plateaus, and Broad Valleys, and Alternative #1 for Rivers. Ten percent (10%) of the members believe it more serious to generate a Type II error and incorrectly list a potentially impaired stream as supporting beneficial uses these members prefer Alternative #2 for both River site classes. Thirty percent (30%) of members believe that the assessment thresholds recommended by DEQ staff are		DEQ agrees that Type I errors in assessment can lead to expenditure of limited resources, and that they should be minimized to the extent possible. However, minimizing Type I errors without concern for Type II errors would run counter to DEQ's CWA obligation to identify impaired waters and the CWA goal of maintaining and improving water quality. Similarly, minimizing Type II errors comes at the expense of incorrectly listing un-impaired waters as impaired and would lead to expenditure of resources developing TMDLs or refining assessments for waters that are not actually impaired. Thus, DEQ agrees with the 30% of Clearwater BAG members that prefer a balanced approach. In addition, DEQ assessors are encouraged to use supplemental information and other data when conducting assessments. This approach further limits both Type I and Type II errors. Finally, during the development of the integrated report, DEQ consults with Watershed Advisory Groups in order to refine listing decisions, further limiting Type I and Type II errors.	
5.	Section 6.2.3 Site Classification	2.	Streams should be assigned to a class based on an assessment rather than location within a coarse geographic map	Although there are many methods for classifying sites for assessments, DEQs approach of general site classification using modified level 4 ecoregions and specific metric adjustment reduces variability in the index and increases its responsiveness to human disturbance. This approach is well supported in the scientific literature and is generally believed superior to classifying sites based on site-level assessments.

¹ Gerritsen, J., Barbour, M.T. and King, K. (2000). Apples, oranges, and ecoregions: on determining pattern in aquatic assemblages. Journal of the North American Benthological Society 19(3):487-496.

				This classification process is iterative, including generation of hypotheses, exploratory analyses, and evaluation and modification of hypotheses. The preliminary hypothesis formulated by the Idaho Department of Environmental Quality (IDEQ) was that level 4 ecoregions would provide a sound basis for classifying sites. This was based on evidence that ecoregions were important classification tools in previous analyses in Idaho and neighboring states.
6.	General Comment	2.	A sub-basin assessment should be initiated in addition to the water body assessment guidance process to refine the accuracy of support calls prior to any final listing decision, and thereby reduce both Type I and Type II errors	The CWA identifies the process that DEQ follows in monitoring and assessment and TMDL sub-programs. Under this process, ambient water quality is monitored and assessed to determine compliance with water quality standards (the scope of WBAGIII). Waters identified as impaired are included on the state's 303(d) list, and scheduled for completion of a TMDL and sub-basin assessment. Without placement on the 303(d) list, there is no requirement to perform a TMDL and sub-basin assessment. DEQ does refine listings based on subbasin assessments and TMDLs (as well as 5-year reviews), often identifying or refining causes and proposing delisting where appropriate. In the cycle of assessments DEQ goes through, the information gathered in TMDLs and 5-year reviews can and does feed into future assessments.
7.	General Comment	2.	Surface water quality monitoring, assessments, TMDL development and TMDL implementation should be well vetted and transparent	DEQ agrees and strives to meet this expectation.
8.	Section 6.2.2.1 Determining Reference Condition	3.	Both documents choose reference sites that have minimal anthropogenic disturbance and reflect as best as possible, pre-development conditions.	While it is true that reference sites are selected to minimize human disturbances, it is not the case that reference site selection is meant to reflect pre-development conditions. All sites used as reference sites were monitored between 1998-2007 and data reflect site conditions at that time. Furthermore, The standard we use for identifying reference is not historical condition, or pristine condition, but rather least disturbed condition, as defined by Stoddard et al. By definition, the least disturbed condition includes effects of human

² McGrath C.L., Woods, A.J., Omernik, J.M., Bryce, S.A., Edmondson, M., Nesser, J.A., Shelden, J., Crawford, R.C., Comstock, J.A., & Plocher, M.D. (2002). Ecoregions of Idaho (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,350,000).

³ Jessup, B. K., Hawkins, C., & Stribling, J. B. (2006). Biological indicators of stream condition in Montana using benthic macroinvertebrates. Prepared by Tetra Tech, Inc., Owings Mills, Maryland and Utah State University, Logan, Utah, for the Department of Environmental Quality, Helena, Montana.

⁴ Stoddard, J., D.P. Larsen, C.P Hawkins, R.K. Johnson, and R.H. Norris. 2006. Setting expectations for the ecological condition of streams: the concept of reference condition. Ecological Applications 16:1267-1276.

				settlement and development, and this is evident in the range of biological metric scores among our reference sites – they are not all the best possible. The following language was added to a callout box in Section 6.2.2.1 of the WBAG to further clarify the use of reference sites: "Reference Sites" are sites that represent the minimally or least disturbed condition. "Stressed Sites" are sites that represent the most disturbed condition. "Reference Condition" refers to the range of index scores at sites determined to be least or minimally impacted. Sites are not compared to a single reference site, but rather to all reference sites within their site class. In addition, the following language was added as a closing statement to section 6.2.2.1: It is important to note that the above reference indicators are used as indicators of human activity, and are not in and of themselves used to determine impairment. The use of least-impacted (i.e., reference) and most-impacted (i.e., stressed) sites provides the opposite extremes of a continuum of human disturbance.
9.	Section 6.2.2 Reference-Site Approach	3.	Reference conditions for highly developed and highly modified streams and rivers prevents some waters from ever achieving pristine or pre-anthropogenic reference biological conditions	See above regarding <i>least disturbed condition</i> approach to reference condition. In our restoration efforts the goal is to return a water body to an unimpaired condition, which for biological condition is a site condition rating of 2 or better.
10.	General	3.	The SWIBAG recommends that IDEQ standards beneficial uses be revised to the highest attainable use	Revision and designation of beneficial uses requires rulemaking and is outside the scope of WBAGIII. To clarify, the following language was added to Section 1.1 of the document: The scope of this revision of WBAG is limited to assessment of criteria and uses in the most recent, approved Idaho Water Quality Standards (IDAPA 58.01.02). Use designation and criteria revision requires rulemaking and is outside the scope of this guidance.
11.	Section 3 Beneficial Use Identification for Assessment	3.	Similarly, the WBAGIII and IRI need to be revised to include the existing "modified" use where appropriate for both streams and rivers in the Southwest Idaho Basin and statewide	Some waterbodies that might be considered modified (e.g., hydrologically modified) were included in the group of reference sites (see comment 21 below). Currently, no waters are designated for Modified use, and therefore their assessment is considered outside the scope of this guidance. The following additional language has been added to WBAGIII in Section 3

to further describe the uses: The COLD use requires water quality appropriate to protect and maintain a community of cold water species; there are currently 819 water body units designated for COLD. The SC use requires water quality appropriate to protect and maintain a community of cool and cold water species where cold water aquatic life may be absent during, or tolerant of, seasonally warm temperatures; there is currently one water body unit designated for SC. The WARM use requires water quality appropriate to protect and maintain a community of warm water species; there are currently two water body units designated for WARM. The MOD use requires water quality appropriate to support an aquatic life community that cannot attain reference conditions for COLD, SC. or WARM due to the following conditions, as described in 40 CFR 131.10(g): (1) Naturally occurring pollutant concentrations prevent the attainment of the use; or (2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or (3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or (4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or (5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or (6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact. Unlike the other aquatic life uses, there are currently no criteria associated with the MOD use in Idaho Water Quality Standards (WQS). Instead, water quality criteria for MOD are to be determined on a case-by-case basis and must be sufficient to protect the existing community (IDAPA 58.01.02.250.05). There are currently no water body units designated for MOD.

				In addition, please see this statement regarding SC, WARM, and MOD uses in Section 6: Bioassessment procedures are described in the following subsections for cold water and salmonid spawning beneficial uses. Since the multimetric indices for cold water aquatic life communities were developed from statewide data sets that include sites with both cool and coldwater species present, it may be feasible to evaluate waters designated for seasonal cold water aquatic life uses using the cold water assessment procedures. However, reference conditions for seasonal cold waters would likely need to be established. Such an application will require further evaluation and consequently there are no assessment tools for seasonal cold water aquatic life uses. No assessment tools for evaluating warm water or modified biological communities are presently available.
12.	General	3.	WBAGIII and IRI provide an opportunity for IDEQ to integrate data from various portions of the water program to refine the uses and ensure that all beneficial uses in the standards are attainable the WBAGIII process should facilitate that review and assign the appropriate attainable use prior to conduction an assessment on a waterbody	See above comment (10.) regarding scope of WBAGIII. DEQ will be developing a separate use attainment / use designation guidance document. WBAGIII has been revised to add the additional language regarding designating and revising uses: 3.4 Designating or Revising Aquatic Life and Recreation Beneficial Uses Idaho WQS and the CWA identify processes for designating uses for previously undesignated waters and for changing or refining aquatic life and recreation use designations. Designation of previously undesignated waters requires changes to the Idaho WQS through rulemaking initiated by DEQ or the Board of Environmental Quality. Use designation should take into consideration existing uses of the water body (see Section 3.2), the physical and biological conditions of the water body, the attainability of the use, possible economic impacts of the designation, and protection of downstream water quality. Revision of designated uses for aquatic life or recreation is achieved through a Use Attainability Analysis (UAA). A UAA is defined as "a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors". A UAA is required for revision of aquatic life or recreation uses when those revisions are designating a use with less stringent criteria than previously applicable to the water body.

12	Section & Aquatic Life Lice Support	3.	WPACIII also should make clear that attaining a sold	While not an explicit function of the assessment process, consideration of proper use designation, where appropriate, and revision of uses will be informed by the assessment process. Added the following parenthetical statement to Section 6:
13.	Section 6 Aquatic Life Use Support Determination	3.	WBAGIII also should make clear that attaining a cold, seasonal cold, or warm water fisheries status are all equal under the Clean Water Act.	all considered to meet the CWA goal of fishable
14.	General	3.	The SWIBAG recommends that WBAGIII be revised to include: - All beneficial use classes, including seasonal cold and modified - A process or feedback loop for segments that designations and IDF&G Fisheries Management goals are inconsistent to determine if a use change is appropriate and necessary A similar process or feedback loop for segments that have been significantly modified but do not have the modified use in state water quality standards	See above comments regarding scope of WBAGIII and Section 6 of WBAGIII statement: However, reference conditions for seasonal cold waters would likely need to be established. Such an application will require further evaluation and consequently there are no assessment tools for seasonal cold water aquatic life uses. No assessment tools for evaluating warm water or modified biological communities are presently available. See comment 12 above.
15.	Section 2.1.1 Intermittent and Ephemeral Waters	3.	The SWIBAG recommends that the WBAGIII and IRI intermittent definition be consistent with state water quality standards	Removed the example language regarding perennial waters (a specific definition is waters that flow more than 90% of the time in a well-defined channel) to avoid confusion. Definition of intermittent in WBAGIII is consistent with WQS (i.e., has zero flow for at least 1 week during most years).
16.	General	3.	 The SWIBAG recommends that WBAGIII and IRI be revised to include appropriate metrics for all uses, including subcategories of the modified use 	See above comments regarding scope of WBAGIII.
17.	Section 5.2 Numeric Criteria Evaluation Policy	3.	EPA regulations at 40CFR130.7.b.2 requires listing based on Balanced Indigenous Population (BIP). WBAGIII has temperature listing based on 10% exceedance of numeric criterion. The SWIBAG recommends that the WBAGIII and IRI temperature listing procedures are consistent with EPA regulations	The Commenter is correct that the CWA and federal regulations include separate requirements for waters where controls on thermal discharges under section 301 are not stringent enough to assure protection and propagation of a balanced, indigenous population ("BIP") of shellfish, fish and wildlife. CWA section 303(d)(1)(B); 40 CFR 130.7(b)(2). However, the BIP standard only applies to listing decisions and TMDLs for waters impaired by thermal discharges from point sources. It does not apply when impairment results from excess heat from nonpoint sources. EPA explains this as follows: "It is important to note, however, that the more flexible 'BIP' standard only applies to listing and TMDL actions related to thermal discharges from point sources. It does not apply to listing and TMDL decisions related to heat excesses in waterbodies resulting from other causes, such as solar radiation, channel and habitat modification and lack of stream flow. When heat build up is a result of those (and other non-point source discharge) causes, decisions to list and establish TMDLs related to heat must be based on the applicable water quality standard for heat." 64 FR 46012

For waters impaired as a result of excess heat from nonpoint sources, the relevant standard is the applicable temperature criteria and other WQS provisions, including section 054.03 of the WQS that allows the agency to consider infrequent, brief and small departures from criteria when making listing decisions. The WBAGIII's discussion of the use of temperature criteria is consistent with the WQS, and consistent with the CWA's treatment of water bodies impaired by excess heat from nonpoint sources.

The Idaho WQS do not expressly address impairment as a result of thermal discharges from point sources and the BIP. However, the BURP process is intended to determine whether there is a healthy, balanced biological community present, and DEQ believes this is analogous to BIP. 40CFR125.71(c) defines BIP as:

"a biotic community typically characterized by diversity, the capacity to sustain itself through cyclic seasonal changes, presence of necessary food chain species and by lack of domination by pollution tolerant species. Such a community may include historically non-native species introduced in connection with a program of wildlife management and species whose presence or abundance results from substantial irreve rsible environmental modifications. Normally however, such a community will not include species whose presence or abundance is attributable to the introduction of pollutants that will be eliminated by compliance by all sources with section 301(b)(2) of the Act; and may not include species whose presence or abundance is attributable to alternative effluent limitations imposed pursuant to section 316(a)."

DEQ believes the outcome of the BURP process will generally inform DEQ regarding whether there is BIP present. Thus, a water body that is not full support as a result of the BURP monitoring will likely also not have a BIP.

DEQ agrees that the WBAGIII should note the distinction between water bodies impaired because of point source thermal discharges and those impaired by nonpoint sources.

The following language has been added to a callout box in Section 5.2 of this guidance:

The Clean Water Act and federal regulations distinguish between listing and TMDL decisions for waters impaired because of point source thermal discharges as opposed to temperature impairment due to nonpoint sources.

				For waters impaired by point source dischargers of heat, listing and TMDL decisions may rely on assurance of protection of a balanced, indigenous population (BIP) of shellfish, fish and wildlife. DEQ considers the biological assessment methods described in Section 6 of this guidance to be equivalent to assessment of a BIP.
18.	General	3.	The SWIBAG recommends that IDEQ review the existing thresholds for cold and the IDF&G Fisheries Management Plans for the SWIBAG to determine if there are adjustments that should be made to the current aquatic life use designations in the state water quality standards	While IDF&G and DEQ goals are often similar, there are significant differences in the missions and goals of DEQ's implementation of the CWA and IDF&G's implementation of their Fisheries Management Plans. The stated objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Conversely, the IDF&G fisheries management plan includes several goals and objectives, among which is to "Meet the demand for fish and wildlife recreation", sometimes through establishment or maintenance of non-native sport fisheries. In other words, the IDF&G management plans often reflect what is achievable under current conditions, while beneficial uses under the CWA are often reflective of a "restored" condition. Despite these differences, DEQ would certainly use all sources of information, including the IDF&G Fisheries Management Plans, to inform our decisions when revising aquatic life uses through a UAA or through first-time designation of aquatic life uses. See above comments regarding use designations and the scope of WBAGIII Added the following language to Section 3.2.1.3. The IDFG Fisheries Management Plans include goals and objectives for specific waters that are not always consistent with the designated beneifical uses for a particular water body. In many instances, the objectives outlined in the Fisheries Management Plan are reflective of current conditions, with the ultimate goal of providing angling opportunities to the public. Conversely, designated beneficial uses are meant to encompass the attainable uses of a water body; what could be attained if point source and non-point source pollutants were controlled. While conflicting use determinations should be reviewed in consultation with IDFG and resolved, revisions to use designations are beyond the scope of water body assessment.

19.	Section 3.2.1	3.	The 3% obligate macroinvertebrate threshold appears to be a very low threshold for designation as Cold	Few macroinvertebrate species captured in Idaho streams are excluded by cold water temperatures; however, there are a few species that are exclusively found in colder temperatures. Thus, even very cold waters are likely to have many species and individuals of species that are not dependent on cold water. The seemingly low threshold of 3% is designed protect those very few obligate cold water species. Designations are expected to protect the most sensitive species. Macroinvertebrate species identified as cold water obligates in this guidance are those species that, when they were present in a sample, 75 of the time the temperature was less than 13° C, and 90% of the time the temperature was below 20° C, at the time the site was sampled.				
20.	Section 6.4.1.4 Stream Index Combination	3.	The SWIBAG recommends that WBAGIII selection approach be to optimize Type I errors and that the selected assessment threshold should minimize Type I errors instead of the proposed approach of using a combination of Type I and II accuracy	See above commer	nts to Clearwate	er BAG regarding Ty	pe I and II errors.	
21.	General	3.	The SWIBAG recommends that WBAGIII include: - Case studies and examples of streams and rivers that are hydrologically modified and meet preanthropogenic conditions - Case studies and examples of rivers and streams that are hydrologically modified where IDEQ has used other reference conditions - Explanation of how WBAGIII incorporates this information into assessments where the waterbody has a use designation that is not fully supports How the case by case determination of alternative reference sites is authorized and consistent with current use designations in state water quality standards	modified rivers and unassessable using Section 6.2.2.2 state magnitude of hydrodetermine whether Generally, this is as monitoring sites. For numeric and narrate The following river upstream but still refile, and would be	d streams. Rather our existing refrees: With this in replaced modification or or not the referchieved through or these waters, tive criteria followites have significated or exceed a considered full	er, those waters are ference condition. I mind, DEQ will constations on a case-by rence condition appropriate selection of appropriate assessment is limit towing this guidance ficant hydrological assessment thresh support for aquati	The language in sider the extent and sider the exte	

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				IDW02353-029	SNAKE R	43.36954	-112.167	
				IDW02353-131	PAYETTE R NF PAYETTE	43.87612	-116.519	
				IDW02353-055	RIVER	44.22072	-116.106	
22.	Section 6.4.2.3 River Index Combination; General	3.	The SWIBAG recommends that WBAGIII be revised to include metrics for all classes of waters, cold, seasonal cold, and warm and the selection of metrics that minimize Type I errors be selected	Assessment of other outside the scope of WBAGIII.	_			
23.	Macrophytes and HABs	3.	The SWIBAG recommends that WBAGIII be revised to include thresholds for both macrophytes and HABs that indicate impaired agricultural or industrial water supply, recreation, or drinking water supply	Macrophytes and HABs are covered under narrative criteria. Section 5.1 of this guidance specifically addresses evaluation of narrative criteria and provides the following specifics regarding toxic algae: However, there can be clear evidence of narrative criteria violations in absence of BURP data. For example, a water body may have reports of fish or cattle mortality from drinking water containing toxic algae. In this example, beneficial uses are clearly impaired, even though no numeric criteria are exceeded.				
24.	Peer Review	3.	The SWIBAG recommends that the recommended revision identified above for consistency with state water quality standards, federal regulations, development of metrics for all three classes of aquatic life, and development and metrics for sub-categories of use be included prior to sending both documents out to at least three peer reviewers acceptable to the regulated community and IDEQ.	The WBAG is a polic the BAG consultation are intended to prove recommendations of the index frameword WBAG. It is built on biologicial metrics a TetraTech, Inc.) and frameworks documed development) and we novel or noteworthy approaches.	n and subsequent vide DEQ with fee of the WBAG. This document is the widely accepted so and indices. The audices after the period of the control of the con	e public review and conditions and review of the scientific backgrounds for the documented to publish excerite classification and the grounds that the	und applied in or development of nt (Ben Jessup, pts of the metric re was nothing	